

## PCT

## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY


(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

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Applicant's or agent's file reference PWO-P001-042	<b>FOR FURTHER ACTION</b>		See Form PCT/IPEA/416
International application No. PCT/IB2004/003684	International filing date (day/month/year) 10.11.2004	Priority date (day/month/year) 10.11.2003	
International Patent Classification (IPC) or national classification and IPC A61B17/16			
Applicant PRECIMED, S.A. et al.			
<p>1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of 4 sheets, including this cover sheet.</p> <p>3. This report is also accompanied by ANNEXES, comprising:</p> <p>a. <input checked="" type="checkbox"/> sent to the applicant and to the International Bureau a total of 3 sheets, as follows:</p> <p><input type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).</p> <p><input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.</p> <p>b. <input type="checkbox"/> (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) , containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).</p>			
<p>4. This report contains indications relating to the following items:</p> <p><input checked="" type="checkbox"/> Box No. I Basis of the opinion</p> <p><input type="checkbox"/> Box No. II Priority</p> <p><input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</p> <p><input type="checkbox"/> Box No. IV Lack of unity of invention</p> <p><input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</p> <p><input type="checkbox"/> Box No. VI Certain documents cited</p> <p><input checked="" type="checkbox"/> Box No. VII Certain defects in the international application</p> <p><input type="checkbox"/> Box No. VIII Certain observations on the international application</p>			
Date of submission of the demand 04.08.2005		Date of completion of this report 20.12.2005	
Name and mailing address of the international preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465		Authorized Officer  Lager, J  Telephone No. +49 89 2399-2957	



INTERNATIONAL PRELIMINARY REPORT  
ON PATENTABILITYInternational application No.  
PCT/IB2004/003684

## Box No. I Basis of the report

1. With regard to the **language**, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.
- ☐ This report is based on translations from the original language into the following language, which is the language of a translation furnished for the purposes of:
- ☐ international search (under Rules 12.3 and 23.1(b))
  - ☐ publication of the international application (under Rule 12.4)
  - ☐ international preliminary examination (under Rules 55.2 and/or 55.3)
2. With regard to the **elements\*** of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:

## Description, Pages

1-7 as originally filed

## Claims, Numbers

1-23 received on 07.12.2005 with letter of 05.12.2005

## Drawings, Sheets

1/4-4/4 as originally filed

- ☐ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing
3. ☐ The amendments have resulted in the cancellation of:
- ☐ the description, pages
  - ☐ the claims, Nos.
  - ☐ the drawings, sheets/figs
  - ☐ the sequence listing (*specify*):
  - ☐ any table(s) related to sequence listing (*specify*):
4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
- ☐ the description, pages
  - ☐ the claims, Nos.
  - ☐ the drawings, sheets/figs
  - ☐ the sequence listing (*specify*):
  - ☐ any table(s) related to sequence listing (*specify*):

\* If item 4 applies, some or all of these sheets may be marked "superseded."

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**Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

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## 1. Statement

Novelty (N)	Yes: Claims	1-23
	No: Claims	
Inventive step (IS)	Yes: Claims	1-23
	No: Claims	
Industrial applicability (IA)	Yes: Claims	1-23
	No: Claims	

## 2. Citations and explanations (Rule 70.7):

**see separate sheet**

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**Box No. VII Certain defects in the international application**

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The following defects in the form or contents of the international application have been noted:

**see separate sheet**

**INTERNATIONAL PRELIMINARY  
REPORT ON PATENTABILITY  
(SEPARATE SHEET)**

International application No.

PCT/IB2004/003684

**Section V.**

1. The closest prior art is represented by document US-A-6 264 647 (=D1) which discloses a surgical instrument holder from which the subject-matter of claim 1 differs in the feature (b), Article 33(2) PCT.

- 1.1 Feature "(b)" of claim 1 defines that the spindle is supported within a tube by precision bearings and that the head of the instrument holder is connected to the spindle by a quick release connection. In D1 the head is fixed to the spindle.

This difference leads to a simple dismounting of the holder, also into more pieces, which simplifies cleaning and sterilization of the device. Such a development of the holder of D1 is not derivable from the available prior art, Article 33(3) PCT.

- 1.2 Claims 2-23 define preferred embodiments of the holder of claim 1.

- 1.3 Thus, claims 1-23 fulfil the requirements of Article 33(2)-(4) PCT.

**Section VII.**

1. The first part of claim 4 should have been amended to: "4. The surgical instrument holder (10) of claim 1,"
2. Claim 1 should have been delimited in the two part form over the teaching of D1 in accordance with Rule 6.3(b) PCT, see Section V paragraph 1. above.
3. The first passage on page 1; page 1, line 18; and page 3, lines 33-34 are not in conformity with PCT Guidelines chapter II 4.17, cf. "incorporated herein by reference".
4. The vague and imprecise statement in the description on page 7, last paragraph, implies that the subject-matter for which protection is sought may be different to that defined by the claims, thereby resulting in lack of clarity (Article 6 PCT) when used to interpret them.

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**What is claimed is:**

1 1. A surgical instrument holder (10) comprising:

2 (a) a head assembly (68) having a shank (12) with a first driveable end (14) and second  
3 coupling end (16), the second end comprising a coupling device (20) having an interface (22) for  
4 receiving a surgical instrument (24) and held in functional assembly to the shank by a releasable  
5 locking mechanism (26) comprised of a ring (30) slideably disposed about the shank, a spring  
6 (32) biased against the coupling device (20) by the ring, and a connection device (34) retaining  
7 the ring in a fixed position during use; and

8 (b) a drive spindle assembly (42), connected to the head assembly (68) so as to transmit  
9 torque therethrough, the spindle assembly comprising an elongated drive spindle (40), high-  
10 precision bearings (44, 120, 122) and a cylindrical tube (46), wherein the drive spindle (40) is  
11 releasably mounted to an end (36) of the spindle assembly and is supported for rotation within the  
12 cylindrical tube (46) by the high-precision bearings disposed therebetween and held in place at  
13 least in part by the shank (12), the bearings (44) precisely controlling the position of a surgical  
14 instrument (24) affixed thereto;

15 wherein further, the connection device (34) provides a common quick-release connection  
16 with the head assembly and the drive spindle assembly (42), whereupon unlocking of the  
17 connection device (34) enables quick disassembly of the connection device, spring (32), ring (30),  
18 and drive spindle assembly (42) for cleaning and component sterilization.

1 2. The surgical instrument holder (10) of claim 1, wherein the ring (30) of the releasable locking  
2 mechanism (26) is moveable in a locking direction to lock the instrument (24) onto the interface  
3 (22).

1 3. The surgical instrument holder (10) of claim 1, wherein the connection device (34) comprises  
2 at least one pin (54) mounted in a coupling sleeve (56) against which the spring (32) is biased by  
3 the ring (30), the sleeve being slideable about the shank (12) so as to operate a ball-detent (60).

1 4. The surgical instrument holder of claim (10), wherein a handle (62) is attached to the first end  
2 of the elongated spindle assembly (42).

1 5. The surgical instrument holder (10) of claim 1, wherein the spindle (40) is held within a  
2 spindle tube (46) by precision ball bearings (44, 120, 122) which provide precision rotation of the  
3 spindle with the tube, and wherein the tube (46) is provided with position sensors (125), placed at

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- 4 pre-determined locations (124) on the tube, thereby enabling the instrument holder (10) to  
5 participate in the communication of position information.
- 1 6. The surgical instrument holder (10) of claim 1, wherein the interface (22) is a recess (22) in the  
2 coupling end (16) of the shank (12).
- 1 7. The surgical instrument holder (10) of claim 6, wherein the recess (22) is cylindrical and  
2 coaxial with a central axis (64) of the shank (12).
- 1 8. The surgical instrument holder (10) of claim 7, wherein a chamfered surface (66) is disposed  
2 within the recess (22) to align the instrument (24) axially.
- 1 9. The surgical instrument holder (10) of claim 1, wherein the spring (32) is a helical  
2 compression spring.
- 1 10. The surgical instrument holder (10) of claim 2, wherein the locking device (30) is disposed in  
2 the coupling end (16) of the shank (12).
- 1 11. The surgical instrument holder (10) of claim 2, wherein the connection device (34) activates  
2 at least one ball-detent (60).
- 1 12. The surgical instrument holder (10) of claim 11, wherein the connection device (34) activates  
2 at least two circumferentially spaced apart ball-detents (60).
- 1 13. The surgical instrument holder (10) of claim 2, wherein the locking direction is toward the  
2 coupling end (16) of the shank (12).
- 1 14. The surgical instrument holder (10) of claim 1, wherein the connection device (34)  
2 cooperates with a bayonet slot (94) to lock the device on the shaft (12).
- 1 15. The surgical instrument holder (10) of claim 14, wherein the pin (54) of the connection  
2 device (34) locks in the bayonet slot (94).
- 1 16. The surgical instrument holder (10) of the claim 15, wherein the bayonet slot (94) is disposed  
2 on the shank (12).
- 1 17. The surgical instrument holder (10) of claim 11, wherein the ball-detent (60) comprises a ball  
2 (106) received into an annular recess (110) in the instrument holder, the locking component (34)  
3 sliding over the ball detent (60) to bias a ball (106) into the recess (110) to lock the shank (12)  
4 onto the drive spindle (36) in a manner to lock the cover assembly (45) including the bearings  
5 (122) in place.
- 1 18. The surgical instrument holder (10) of claim 1, wherein the interface (22) is a recess  
2 intersected by a transverse slot (76) in which a wall (80) of the slot engages a corresponding  
3 surface (82) of the instrument (24).
- 1 19. The surgical instrument holder (10) of claim 18, wherein the recess (22) includes a seat (84)  
2 shaped to receive the end of the instrument (24) about its circumference (86).

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1 20. The surgical instrument holder (10) of claim 1, wherein the shank (12) is hollow along its  
2 length so as to provide a channel (90) facilitating chip removal.

1 21. The surgical instrument holder (10) of claim 1, wherein the tube (46) includes position  
2 sensors (124) mounted on the spindle (40) which participate in the communication of position  
3 information to a computer to aid in computer assisted surgery.

1 22. The surgical instrument holder (10) of claim 1, wherein a frustoconical widened part (100)  
2 provides a grip for the thumb and index finger for pulling the locking component (30) back  
3 counter to the action of the spring (32) in order to release the instrument (24) fixed on the  
4 instrument holder.

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1 23. The surgical instrument holder (10) of claim 1, wherein, the spindle assembly (42) is  
2 disconnectable from the head assembly (68) by means of the common connection device (34)  
3 when a user holds the device (34) having an internal stud (54) against a bias of the spring (32),  
4 then turns the ring (34) in such a way that its stud (54) leaves a bayonet catch (94) so as to unlock  
5 the ring from the catch, the user being able to remove the ring (34) from the shank (12), and then  
6 the spring (32), followed by the locking component (30) as well.